

SEQUENCE LISTING

<110> GEORGES, FAWZY

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HUSSAIN, ATTA A. K.

SELVARAJ, GOPALAN

DATLA, RAJU

<120> METHODS AND COMPOSITIONS FOR MODULATING SECONDARY PLANT
METABOLITES

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<150> US 60/072156

<151> 1998-01-22

<150> US 09/012453

<151> 1998-01-23

<160> 7

<170> PatentIn Ver. 2.0

<210> 1

<211> 483

<212> DNA

<213> Arthrobacter pascens

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483

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<213> Bacillus pumilus

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5

10

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Trp Glu Tyr Glu Ile Tyr Ile Lys Asn Asp His Thr Ile Asp Tyr Arg

20

25

30

Ile His Ser Gly Met Val Gly Gly Arg Trp Val Arg Asp Gln Glu Val

35

40

45

Asn Ile Val Lys Leu Thr Lys Gly Val Tyr Lys Val Ser Trp Thr Glu

50

55

60

Pro Thr Gly Thr Asp Val Ser Leu Asn Phe Met Pro Glu Glu Lys Arg

65

70

75

80

Met His Gly Val Ile Phe Phe Pro Lys Trp Val His Glu Arg Pro Asp

85

90

95

Ile Thr Val Cys Tyr Gln Asn Asp Tyr Ile Asp Leu Met Lys Glu Ser

100

105

110

Arg Glu Lys Tyr Glu Thr Tyr Pro Lys Tyr Val Val Pro Glu Phe Ala

115

120

125

Asp Ile Thr Tyr Ile His His Ala Gly Val Asn Asp Glu Thr Ile Ile

130

135

140

Ala Glu Ala Pro Tyr Glu Gly Met Thr Asp Glu Ile Arg Ala Gly Arg

145

150

155

160

Lys

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<213> Arthrobacter pascens

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1

5

10

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Ile Ile Ile Gly Gly Ser Ala Gly Ala Ala Val Ala Ala Arg Leu

20

25

30

Ser Glu Glu Pro Thr Val Ser Val Ala Leu Val Glu Ala Gly Pro Asp

35

40

45

Asp Arg Gly Val Pro Glu Val Leu Gln Leu Asp Arg Trp Met Glu Leu

50

55

60

Leu Glu Ser Gly Tyr Asp Trp Asp Tyr Pro Ile Glu Pro Gln Glu Asn

65

70

75

80

Gly Asn Ser Phe Met Arg His Ala Arg Ala Lys Ile Met Gly Gly Cys

85

90

95

Ser Ser His Asn Ser Cys Ile Ala Phe Trp Ala Pro Arg Glu Asp Leu

100

105

110

Asp Glu Trp Glu Ser Lys Tyr Gly Ala Thr Gly Trp Asn Ala Glu Ser

115

120

125

Ala Trp Pro Leu Tyr Gln Arg Leu Glu Thr Asn Glu Asp Ala Gly Pro

130

135

140

Asp Ala Pro His His Gly Asp Ser Gly Pro Val His Leu Met Asn Val

145

150

155

160

Pro Pro Ala Asp Pro Ala Gly Val Ala Leu Leu Asp Ala Cys Glu Gln

165

170

175

Ala Gly Ile Pro Arg Ala Lys Phe Asn Thr Gly Thr Thr Val Ile Asn

180

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190

Gly Ala Asn Phe Phe Gln Ile Thr Arg Arg Ala Asp Gly Thr Arg Ser

195

200

205

Ser Ser Ser Val Ser Tyr Ile His Pro Ile Ile Glu Arg Gly Asn Phe

210

215

220

Thr Leu Leu Thr Gly Leu Arg Ala Arg Gln Leu Val Phe Asp Ala Asp
225 230 235 240

Lys Arg Cys Thr Gly Val Asp Val Val Asp Ser Ala Phe Gly Arg Thr
245 250 255

His Arg Leu Ser Ala Arg Cys Glu Val Ile Leu Ser Thr Gly Ala Ile
260 265 270

Asp Ser Pro Lys Leu Leu Met Leu Ser Gly Ile Gly Pro Ala Ala His
275 280 285

Leu Ala Glu His Gly Val Glu Val Leu Val Asp Ser Pro Gly Val Gly
290 295 300

Glu His Leu Gln Asp His Pro Glu Gly Val Val Gln Phe Glu Ala Lys
305 310 315 320

Gln Gln Met Val Gln Thr Ser Thr Gln Trp Trp Glu Ile Gly Ile Phe
325 330 335

Thr Pro Thr Glu Asn Gly Leu Asp Arg Pro Asp Leu Met Met His Tyr
340 345 350

Gly Ser Val Pro Phe Asp Met Asn Thr Leu Arg Tyr Gly Tyr Pro Thr
355 360 365

Thr Glu Asn Gly Phe Ser Leu Thr Pro Asn Val Thr His Ala Arg Ser

370 375 380

Arg Gly Thr Val Arg Leu Arg Ser Arg Asp Phe Arg Asp Lys Pro Ala

385 390 395 400

Val Asp Pro Arg Tyr Phe Thr Asp Pro Glu Gly His Asp Met Arg Val

405 410 415

Met Val Ala Gly Ile Arg Lys Ala Arg Glu Ile Ala Ala Gln Pro Ala

420 425 430

Met Ala Glu Trp Thr Gly Arg Glu Leu Ser Pro Gly Thr Glu Ala Gln

435 440 445

Thr Asp Glu Glu Leu Gln Asp Tyr Ile Arg Lys Thr His Asn Thr Val

450 455 460

Tyr His Pro Val Gly Thr Val Arg Met Gly Pro Ala Asp Asp Asp Met

465 470 475 480

Ser Pro Leu Asp Pro Glu Leu Arg Val Lys Gly Val Thr Gly Leu Arg

485 490 495

Val Ala Asp Ala Ser Val Met Pro Glu His Val Thr Val Asn Pro Asn

500

505

510

Ile Thr Val Met Met Ile Gly Glu Arg Cys Ala Asp Leu Ile Arg Ala

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Ser Arg Thr Gly Glu Thr Thr Ala Glu Ala Glu Leu Ser Ala Ser

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Leu Ala

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<213> Arthrobacter pascens

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11/11

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Primer

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<223> Description of Artificial Sequence: Primer

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